QPC: RF23MSC001 | Reg. No | | | | | | | | | | | AY - 23

GIET UNIVERSITY, GUNUPUR – 765022

M. Sc. (First Semester) Regular Examinations, February – 2024

22BTPC101 – Biochemistry

(Biotechnology)

Time: 3 hrs | Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART – A **(2 x 10 = 20 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. Define pH. Write its biological importance.	CO1	K2
b. Write the composition of sucrose, maltose and lactose.	CO4	K1
c. Differentiate between nucleosides and nucleotides.	CO5	K4
d. What are coenzymes? Give examples.	CO3	K1
e. What is PUFA? Give two examples.	CO4	K1
f. An enzyme has a V_{max} of 150 micromoles product formed per minute by a mg of enzyme. The K_M for the major substrate of the enzyme is 1.5 mM. What is the initial reaction rate (Vo) when the [S] is 0.5 mM?	CO3	K2
g. What are conjugate proteins? Give two examples.	CO2	K1
h. Define entropy and enthalpy.	CO6	K2
i. Explain the alpha helical structure of protein with diagram.	CO2	K2
j. Where in the chloroplasts does the Calvin Cycle of photosynthesis take place?	CO7	K1

PART – B **(10 x 5 = 50 Marks)**

Answer ***ANY FIVE*** questions	Marks	CO #	Blooms Level
2. a. Explain the role kidney in maintaining pH.	5	CO1	K1
b. Discuss in brief about the emergent properties of biomolecules in water.	5	CO1	K2
3.a. Give an account on structure function relationship of hemoglobin.	5	CO2	K1
b. Classify carbohydrates with examples; write biological importance.	5	CO4	K4
4. a. What are enzymes? Classify them giving one example each.	5	CO3	K1
b. Write a note on competitive enzyme inhibition	5	CO3	K1
5.a. Write note on self-assembly of lipids.	5	CO5	K1
b. Explain the structure of tRNA with neat diagram. Add a note on its function.	5	CO5	K2
6. a. What is photosynthesis?	2	CO7	K2
b. Explain the process of light driven electron flow during photosynthesis.	8	CO7	K2
7.a. Write note on tertiary structure of protein.	5	CO2	K2
b. Explain briefly about storage polysaccharides and their importance.	5	CO 4	K2
8. a. Outline the reactions of TCA cycle.	5	CO6	K2
b. Illustrate the mechanism of electron transport chain in mitochondria.	5	CO6	K2